Informal Fallacies

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Learning Objectives

After reading this chapter, you should be able to:

1. Describe the various fallacies of support, their origins, and circumstances in which specific arguments may not be fallacious.
2. Describe the various fallacies of relevance, their origins, and circumstances in which specific arguments may not be fallacious.
3. Describe the various fallacies of clarity, their origins, and circumstances in which specific arguments may not be fallacious.

We can conceive of logic as providing us with the best tools for seeking truth. If our goal is to seek truth, then we must be clear that the task is not limited to the formation of true beliefs based on a solid logical foundation, for the task also involves learning to avoid forming false beliefs. Therefore, just as it is important to learn to employ good reasoning, it is also important to learn to avoid bad reasoning.

Toward this end, this chapter will focus on **fallacies**. Fallacies are errors in reasoning; more specifically, they are common patterns of reasoning with a high likelihood of leading to false conclusions. Logical fallacies often *seem* like good reasoning because they resemble perfectly legitimate argument forms. For example, the following is a perfectly valid argument:

> If you live in Paris, then you live in France.
> You live in Paris.
> Therefore, you live in France.

Assuming that both of the premises are true, it logically follows that the conclusion *must* be true. The following argument is very similar:

> If you live in Paris, then you live in France.
> You live in France.
> Therefore, you live in Paris.

This second argument, however, is invalid; there are plenty of other places to live in France. This is a common formal fallacy known as *affirming the consequent*. Chapter 4 discussed how this fallacy was based on an incorrect logical *form*. This chapter will focus on *informal* fallacies, fallacies whose errors are not so much a matter of form but of *content*. The rest of this chapter will cover some of the most common and important fallacies, with definitions and examples. Learning about fallacies can be a lot of fun, but be warned: Once you begin noticing fallacies, you may start to see them *everywhere*.

Before we start, it is worth noting a few things. First, there are many, many fallacies. This chapter will consider only a sampling of some of the most well-known fallacies. Second, there is a lot of overlap between fallacies. Reasonable people can interpret the same errors as different fallacies. Focus on trying to understand both interpretations rather than on insisting that only one can be right. Third, different philosophers often have different terminology for the same fallacies and make different distinctions among them. Therefore, you may find that others use different terminology for the fallacies that we will learn about in this chapter. Not to worry—it is the *ideas* here that are most important: Our goal is to learn to identify and avoid mistakes in reasoning, regardless of specific terminology.

Finally, there are many ways to divide the fallacies into categories. This chapter will refer to fallacies of support, fallacies of clarity, and fallacies of relevance. Avoiding fallacies may be difficult at first, but ultimately, as we learn to reason more fairly and carefully, we will find that avoiding fallacious reasoning helps us develop habits of mental fairness, trustworthiness, and openness, enhancing our ability to discern truth from error.

7.1 Fallacies of Support

When reasoning, it is essential to reach conclusions based on adequate evidence; otherwise, our views are unsubstantiated. The better the evidence, the more credible our claims are, and the more likely they are to be true. Fallacies can lead us to accept conclusions that are not adequately supported and may be false. Let us learn some of the most common ways this can happen.

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With fallacious reasoning, the premises only appear to support the conclusion. When you look closely at a fallacious argument, you can see how the premises fail to offer support.

Begging the Question

One of the most common fallacies is called **begging the question**, also known as *petitio principii*. This fallacy occurs when someone gives reasoning that assumes a major point at issue; it assumes a particular answer to the question with which we are concerned. In other words, the premises of the argument claim something that someone probably would not agree with if he or she did not already accept the conclusion. Take a look at the following argument:

> Abortion is wrong because a fetus has a right to live.

There is nothing wrong with this argument as an expression of a person's belief. The question is whether it will persuade anyone who does not already agree with the conclusion. The premise of this argument assumes the major point at issue. If fetuses have a right to live, then it would follow almost automatically that abortion is wrong. However, those who do not accept the conclusion probably do not accept this premise (perhaps they do not feel that the developing embryo is developed enough to have human rights yet). It is therefore unlikely that they will be persuaded by the argument. To improve the argument, it would be necessary to give good reasons *why* a fetus has a right to life, reasons that would be persuasive to people on the other side of the argument.

For more clarity about this problem, take a look at these similar arguments:

> Capital punishment is wrong because all humans have a right to live.

> Eating meat is wrong because animals have a right to live.

These arguments are nearly identical, yet they reach different conclusions about what types of killing are wrong because of different assumptions about who has the right to live. Each, however, is just as unlikely to persuade people with a different view. In order to be persuasive, it is best to give an argument that does not rest on controversial views that are merely assumed to be true. It is not always easy to create non-question-begging arguments, but such is the challenge for those who would like to have a strong chance of persuading those with differing views.

Here are examples on both sides of a different question:

> Joe: I know that God exists because it says so in the Bible.
>
> Doug: God doesn't exist because nothing supernatural is real.

Do you think that either argument will persuade someone on the other side? Someone who does not believe in God probably does not accept the Bible to be completely true, so this reasoning will not make the person change his or her mind. The other argument does the same thing by simply ruling out the possibility that anything could exist other than physical matter. Someone who believes in God will probably not accept this premise.

Both arguments, on the other hand, will probably sound very good to someone who shares the speaker's point of view, but they will not sound persuasive at all to those who do not. Committing the fallacy of begging the question can be compared to "preaching to the choir" because the only people who will accept the premise are those who already agree with the conclusion.

Circular Reasoning

An extreme form of begging the question is called circular reasoning. In **circular reasoning**, a premise is identical, or virtually identical, to the conclusion.

Here is an example:

> Mike: Capital punishment is wrong.
>
> Sally: Why is it wrong?
>
> Mike: Because it *is*!

Mike's reasoning here seems to be, "Capital punishment is wrong. Therefore, capital punishment is wrong." The premise and conclusion are the same. The reasoning is technically logically valid because there is no way for the premise to be true and the conclusion false—since they are the same—but this argument will never persuade anyone, because no one will accept the premise without already agreeing with the conclusion.

As mentioned, circular reasoning can be considered an extreme form of begging the question. For another example, suppose the conversation between Joe and Doug went a little further. Suppose each questioned the other about how they knew that the premise was true:

> Joe: I know that the Bible is true because it says so right here in the Bible, in 2 Timothy 3:16.
>
> Doug: I know that there is nothing supernatural because everything has a purely natural explanation.

Here both seem to reason in a circular manner: Joe says that the Bible is true because it says so, which assumes that it is true. On the other side, to say that everything has a purely natural

explanation is the same thing as to say that there is nothing supernatural, so the premise is synonymous with the conclusion. If either party hopes to persuade the other to accept his position, then he should offer premises that the other is likely to find persuasive, not simply another version of the conclusion.

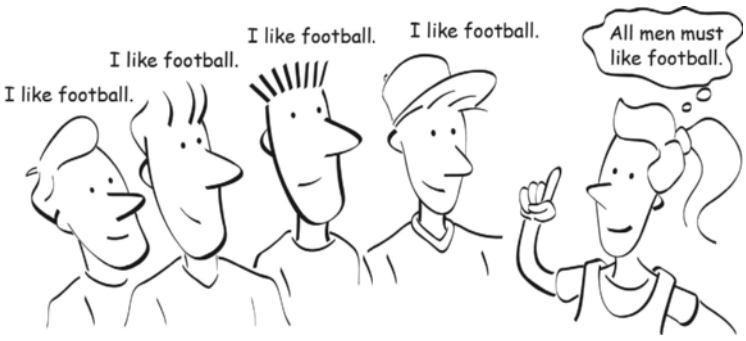
Moral of the Story: Begging the Question and Circular Reasoning

To demonstrate the truth of a conclusion, it is not enough to simply assume that it is true; we should give evidence that has a reasonable chance of being persuasive to people on the other side of the argument. The way to avoid begging the question and circular reasoning is to think for a minute about whether someone with a different point of view is likely to accept the premises you offer. If not, strive to modify your argument so that it has premises that are more likely to be accepted by parties on the other side of the debate.

Hasty Generalizations and Biased Samples

Chapter 5 demonstrated that we can reason from a premise about a sample population to a conclusion about a larger population that includes the sample. Here is a simple example:

> Every crow I have ever seen has been black.
> Therefore, all crows are black.



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Some inductive arguments make generalizations about certain groups, but in a hasty generalization, the sample size is inadequate.

This is known as making an *inductive generalization*; you are making a generalization about all crows based on the crows you have seen. However, if you have seen only a small number of crows, then this inductive argument is weak because the sample of crows was not large enough. A **hasty generalization** is an inductive generalization in which the sample size is too small. The person has generalized too quickly, without adequate support.

Notice that stereotypes are often based on hasty generalizations. For example, sometimes people see a person of a different demographic driving poorly and, based on only one example, draw a conclusion about the whole demographic. As Chapter 8 will discuss, such generalizations can act as obstacles to critical thinking and have led to many erroneous and hurtful views (see also http://www.sciencedaily.com/releases/2010/08/100810122210.htm for a discussion of the long-term effects of stereotyping).

Not all inductive generalizations are bad, however. A common form of inductive generalization is a poll. When someone takes a poll, he or she samples a group to draw a conclusion about a larger group. Here would be an example:

> We sampled 1,000 people, and 70% said they will vote for candidate A.
> Therefore, candidate A will win.

Here, the sample size is relatively large, so it may supply strong evidence for the conclusion. Recall Chapter 5's discussion of assessing the strength of statistical arguments that use samples. That chapter discussed how an inductive generalization could be affected if a sample population is not truly random. For example, what if all of the people polled were in the same county? The results of the poll might then be skewed toward one candidate or other based on who lives in that county. If, in a generalization, the sample population is not truly representative of the whole population, then the argument uses a **biased sample** (recall the Chapter 5 discussion of Gallup's polling techniques and see this chapter's *A Closer Look: Biased Samples in History* for a historical example of how even well-intentioned polling can go wrong).

Slanted polling questions represent just one method of creating deliberately biased samples; another method is called cherry picking. **Cherry picking** involves a deliberate selection of data to support only one side of an issue. If there is evidence on both sides of a controversial question and you focus only on evidence supporting one side, then you are manipulating the data by ignoring the evidence that does not support the conclusion you desire.

For example, suppose an infomercial gives many examples of people who used a certain product and had amazing results and therefore suggests that you will probably get great results, too. Even if those people are telling the truth, it is very possible that many more people did not have good results. The advertisers will, of course, only put the people in the commercial that had the best results. This can be seen as cherry picking, because the viewer of the commercial does not get to see all of the people who felt that the product was a waste of money.

A Closer Look: Biased Samples in History

In 1936 the largest poll ever taken (10 million questionnaires) showed that Alf Landon would soundly defeat Franklin D. Roosevelt in the presidential election. The results were quite the opposite, however. What went wrong? The answer, it turns out, was that the names and addresses that were used to send out the questionnaires were taken from lists of automobile owners, phone subscribers, and country club memberships (DeTurk, n.d.). Therefore, the polls tended to be sent to wealthier people, who were more likely to vote for Landon.

Typically, finding a representative sample means selecting a sample randomly from within the whole population. However, as this example shows, it is sometimes difficult to make certain that there is no source of bias within one's sampling method. In fact, it is really difficult to get inductive generalizations just right. We must have a sufficiently large sample, and it must be truly representative of the whole population. We should be careful to look at a large sample of data that accurately represents the population in general. There is a complex science of polling and analyzing the data to predict things like election results. A more in-depth discussion of this topic can be found in Chapter 5.

Appeal to Ignorance and Shifting the Burden of Proof

Sometimes we lack adequate evidence that a claim is true or false; in such situations it would seem wise to be cautious and search for further evidence. Sometimes, however, people take the lack of proof on one side to constitute a proof of the other side. This type of reasoning is known as the **appeal to ignorance**; it consists of arguing either that a claim is true because it has not been proved to be false or that a claim is false because it has not been proved to be true.

Here is a common example on both sides of another issue:

> UFO investigator: "You can't prove that space aliens haven't visited Earth, so they probably have."
>
> Skeptic: "We haven't yet verified the existence of space aliens, so they must not exist."

Both the believer and the skeptic in these examples mistakenly take a failure to prove one side to constitute a demonstration of the truth of the other side. It is sometimes said that the *absence of evidence is not evidence of absence*. However, there are some exceptions in which such inferences are justified. Take a look at the following example:

> John: There are no elephants in this room.
>
> Cindy: How do you know?
>
> John: Because I do not see any.

In this case the argument may be legitimate. If there were an elephant in the room, one would probably notice. Another example might be in a medical test in which the presence of an antibody would trigger a certain reaction in the lab. The absence of that reaction is then taken to demonstrate that the antibody is not present. For such reasoning to work, we need to have good reason to believe that *if* the antibody were present, *then* the reaction would be observed.

However, for that type of reasoning to work in the case of space aliens, the believer would have to demonstrate that *if* there were none, *then* we would be able to prove that. Likewise, the skeptic's argument would require that *if* there were space aliens, *then* we would have been able to verify it. Such a statement is likely to be true for the case of an elephant, but it is not likely to be the case for space aliens, so the appeal to ignorance in those examples is fallacious.

The appeal to ignorance fallacy is closely related to the fallacy of **shifting the burden of proof**, in which those who have the responsibility of demonstrating the truth of their claims (the so-called burden of proof) simply point out the failure of the other side to prove the opposing position. People who do this have not met the burden of proof but have merely acted as though the other side has the burden instead. Here are two examples of an appeal to ignorance that seem to shift the burden of proof:

> Power company: "This new style of nuclear power plant has not been proved to be unsafe; therefore, its construction should be approved." (It would seem

that, when it comes to high degrees of risk, the burden of proof would be on the power plant's side to show that the proposed plants are safe.)

Prosecuting attorney: "The defense has failed to demonstrate that their client was not at the scene of the crime. Therefore, we must put this criminal in jail." (This prosecutor seems to assume that it is the duty of the defense to demonstrate the innocence of its client, when it is actually the prosecution's responsibility to show that the accused is guilty beyond reasonable doubt.)

It is not always easy to determine who has the burden of proof. However, here are some reasonable questions to ask when it comes to making such a determination:

- *Which side is trying to change the status quo?* One person trying to get another person to change views will usually have the burden of proof; otherwise, the other person will not be persuaded to change.
- *Which side's position involves greater risk?* A company that designs parachutes or power plants, for example, would be expected to demonstrate the safety of the design.
- *Is there a rule that determines the burden of proof in this context?* For example, the American legal system requires that, in criminal cases, the prosecution prove its case "beyond reasonable doubt." Debates often put the burden of proof on the affirmative position.

Generally speaking, we should arrive at conclusions based on good evidence for that conclusion, not based on an absence of evidence to the contrary. An exception to this rule is the case of negative tests: cases in which *if* the claim P is true, then result Q would very likely be observed. In these cases, if the result Q is not observed, then we may infer that P is unlikely to be true. In general, when one side has the burden of proof, it should be met; simply shifting the burden to the other side is a sneaky and fallacious move.

Appeal to Inadequate Authority

An appeal to authority is the reasoning that a claim is true because an authority figure said so. Some people are inclined to think that all appeals to authority are fallacious; however, that is not the case. Appeals to authority can be quite legitimate if the person cited actually is an authority on the matter. However, if the person cited is not in fact an authority on the subject at hand, then it is an **appeal to inadequate authority**.

To see why appeals to authority in general are necessary, try to imagine how you would do in college if you did not listen to your teachers, textbooks, or any other sources of information. In order to learn, it is essential that we listen to appropriate authorities. However, many sources are unreliable, misleading, or even downright deceptive. It is therefore necessary to learn to distinguish reliable sources of authority from unreliable sources. How do we know which is which? Here are some good questions to ask when considering whether to trust a given source or authority:

- Is this the kind of topic that can be settled by an appeal to authority?
- Is there much agreement among authorities about this issue?
- Is this person or source an actual authority on the subject matter in question?

- Can this authority be trusted to be honest in this context?
- Am I understanding or interpreting this authority correctly?

If the answer to all of these is "yes," then it may be a legitimate appeal to authority; if the answer to any of them is "no," then it may be fallacious. Here are some examples of how appeals to authority can fail at each of these questions:

Is this the kind of topic that can be settled by an appeal to authority?

> Student: "Capitalism is wrong; Karl Marx said so." (The morality of capitalism may not be an issue that authority alone can resolve. We should look at reasons on both sides to determine where the best arguments are.)

Is there much agreement among authorities about this issue?

> Student: "Abortion is wrong. My philosophy teacher said so." (Philosophers do carefully consider arguments about abortion, but there is no consensus among them about this topic; there are good philosophers on both sides of the issue. Furthermore, this might not be the type of question that can be settled by an appeal to authority. One should listen to the best arguments on each side of such issues rather than simply trying to appeal to an authority.)

Is this person or source an actual authority on the subject matter in question?

> Voter: "Global warming is real. My congressperson said so." (A politician may not be an actual authority on the matter, since politicians often choose positions based on likely voting behavior and who donates to their campaigns. A climatologist is more likely to be a more reliable and informed source in this field.)

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If the guitar player were stating his position on the best guitar to purchase, we might be inclined to follow his advice, as he would be a legitimate authority. However, in this case he is an inadequate authority.

Can this authority be trusted to be honest in this context?

> Juror: "I know that the accused is innocent because he said he didn't do it." (A person or entity who has a stake in a matter is called an *interested party*. A defendant is definitely an interested party. It would be better to have a witness who is a neutral party.)

Am I understanding or interpreting this authority correctly?

> Christian: "War is always wrong because the Bible states, 'Thou shalt not kill.'" (This one is a matter of interpretation. What does this scripture really *mean*? In this sort of case, the interpretation of the source is the most important issue.)

Finally, here is an example of a legitimate appeal to authority:

> "Martin Van Buren was a Democrat; it says so in the encyclopedia." (It is hard to think of why an encyclopedia—other than possibly an openly editable resource such as Wikipedia—would lie or be wrong about an easily verifiable fact.)

It may still be hard to be certain about many issues even after listening to authorities. In such cases the best approach is to listen to and carefully evaluate the reasoning of many experts in the field, to determine to what degree there is consensus, and to listen to the best arguments for each position. If we do so, we are less prone to being misled by our own biases and the biases of interested parties.

False Dilemma

An argument presents a **false dilemma**, sometimes called a *false dichotomy*, when it makes it sound as though there were only two options when in fact there are more than just those two options. People are often prone to thinking of things in black-and-white terms, but this type of thinking can oversimplify complex matters. Here are two simple examples:

> Wife to husband: "Now that we've agreed to get a dog, should it be a poodle or a Chihuahua?" (Perhaps the husband would rather get a Great Dane.)

> Online survey: "Are you a Republican or a Democrat?" (This ignores many other options like Libertarian, Green, Independent, and so on. If you are in one of those other parties, how should you answer?)

Such examples actually appear to be manipulative, which is why this can be such a problematic fallacy. Take a look at the following examples:

> Partygoer: "What is it going to be? Are you going to go drink with us, or are you going to be a loser?" (This seems to imply that there are no other options, like not drinking and still being cool.)

> Activist: "You can either come to our protest or you can continue to support the abuse we are protesting." (This assumes that if you are not protesting, you do not support the cause and in fact support the other side. Perhaps you believe there are better ways to change the system.)

Though the fallacy is called a *di*lemma, implying two options, the same thing can happen with more than two options—for example, if someone implies that there are only five options when there are in fact other options as well.

False Cause

The assumption that because two things are related, one of them is the cause of the other is called the fallacy of **false cause**. It is traditionally called *post hoc ergo propter hoc* (often simply *post hoc*), which is Latin for "it came after it therefore it was caused by it." Clearly, not everything that happens after something else was caused by it. Take this example:

> John is playing the basketball shooting game of H-O-R-S-E and tries a very difficult shot. Right before the shot someone coughs, and the ball goes in. The next time John is going to shoot, he asks that person to cough. (John seems to be assuming that the cough played some causal role in the ball going in. That seems unlikely.)

Here is a slightly more subtle example:

> John is taller than Sally, and John won the election, so it must have been because he was taller. (In this case, he was taller first and then won the election, so the speaker assumes that is the reason. It is conceivable that his height was a factor, but that does not follow merely because he won; we would need more evidence to infer that was the reason.)

Large-scale correlations might be more complex, but they can commit the same fallacy. Suppose that two things, A and B, correlate highly with each other, as in this example:

> The number of police cars in a city correlates highly with the amount of crime in a city. Therefore, police cars cause crime.

It does not necessarily follow that A, the number of police cars, causes B, crime. Another possibility is that B causes A; the amount of crime causes the higher number of police cars. Another option is that a third thing is causing both A and B; in this case the city's population might be causing both. It is also possible that in some cases the correlation has no causal basis.

Practice Problems 7.1

Identify the fallacy in each statement or exchange.

1. Politician: "We either decide to keep the handgun laws in the city limits and maintain peace, or we revoke the laws and let the city become a modern day Wild West."
   a. begging the question
   b. circular reasoning
   c. hasty generalization
   d. false dilemma
   e. no fallacy
2. PTA Parent: "Should school kids say the Pledge of Allegiance before class? Certainly, why shouldn't they?"
   a. appeal to ignorance
   b. appeal to inadequate authority

(continued)

Practice Problems 7.1 *(continued)*

c. false dilemma
d. shifting the burden of proof
e. no fallacy

3. "Both times I went to the movies at Northpark Mall the people watching the movies were extremely disruptive. That movie theater is horrible."
   a. false cause
   b. hasty generalization
   c. begging the question
   d. circular reasoning
   e. no fallacy

4. "After I had been in a coma for 10 days following my accident, the swelling in my brain went down right after the priest put holy water on my forehead. The water healed me."
   a. begging the question
   b. hasty generalization
   c. cherry picking
   d. false cause
   e. no fallacy

5. Tom: "Early humans had a simple form of music played on instruments made from animal bones and skins."
   Boris: "How do you know that?"
   Tom: "Well, no one has proved that they didn't."
   a. biased sample
   b. appeal to inadequate authority
   c. appeal to ignorance
   d. false dilemma
   e. no fallacy

6. "My father always only bought Ford cars. He said they were the best cars ever. So I only buy Fords."
   a. circular reasoning
   b. biased sample
   c. false cause
   d. appeal to inadequate authority
   e. no fallacy

7. "Ice cream is bad because it's unhealthy."
   a. hasty generalization
   b. false cause
   c. begging the question
   d. false dilemma
   e. no fallacy

8. "Michael Jordan wears Hanes, so they must be the best."
   a. biased sample
   b. begging the question
   c. appeal to inadequate authority
   d. shifting the burden of proof
   e. no fallacy

(continued)

Practice Problems 7.1 *(continued)*

9. Father: "Republicans only care about making more money and paying lower taxes. That is what they really care about."
   Son: "Why is that?"
   Father: "Because they want to keep more of their money and not have to support others through payment."
   a. circular reasoning
   b. appeal to pity
   c. false cause
   d. appeal to ridicule
   e. no fallacy
10. Student: "A recent study found that people who have braces and other work to straighten their teeth are more confident and better looking, according to members of the American Association of Dental Health."
    a. *ad hominem*
    b. biased sample
    c. burden of proof
    d. false dilemma
    e. no fallacy

7.2 Fallacies of Relevance

We have seen examples in which the premises are unfounded or do not provide adequate support for the conclusion. In extreme cases the premises are barely even relevant to the truth of the conclusion, yet somehow people draw those inferences anyway. This section will take a look at some examples of common inferences based on premises that are barely relevant to the truth of the conclusion.

Red Herring and Non Sequitur

A **red herring** fallacy is a deliberate attempt to distract the listener from the question at hand. It has been suggested that the phrase's origins stem from the practice of testing hunting dogs' skills by dragging a rotting fish across their path, thus attempting to divert the dogs from the track of the animal they are supposed to find. The best dogs could remain on the correct path despite the temptation to follow the stronger scent of the dead fish (deLaplante, 2009). When it comes to reasoning, someone who uses a red herring is attempting to steer the listener away from the path that leads to the truth of the conclusion.

Here are two examples:

> Political campaigner: "This candidate is far better than the others. The flag tie he is wearing represents the greatest country on Earth. Let me tell you about the great country he represents. . . ." (The campaigner seems to be trying to get the voter to associate love for America with that particular candidate, but presumably all of the candidates love their country. In this case patriotism is

> the red herring; the real issue we should be addressing is which candidate's policies would be better for the country.)
>
> Debater in an argument about animal rights: "How can you say that animals have rights? There are humans suffering all around the world. For example, there are human beings starving in Africa; don't you care about them?" (There may indeed be terrible issues with human suffering, but the existence of human suffering does not address the question of whether animals have rights as well. This line of thinking appears to distract from the question at hand).

An extreme case in which someone argues in an irrelevant manner is called a **non sequitur**, meaning that the conclusion does not follow from the premises.

> Football player: "I didn't come to practice because I was worried about the game this week; that other team is too good!" (Logically, the talent of the other team would seem to give the player all the more reason to go to practice.)
>
> One student to another: "I wouldn't take that class. I took it and had a terrible time. Don't you remember: That semester, my dog died, and I had a car accident. It was terrible." (These events are irrelevant to the quality of the class, so this inference is unwarranted.)

Whereas a red herring seems to take the conversation to a new topic in an effort to distract people from the real question, a non sequitur may stay on topic but simply make a terrible inference—one in which the conclusion is entirely unjustified by the premises given.

Appeal to Emotion

The **appeal to emotion** is a fallacy in which someone argues for a point based on emotion rather than on reason. As noted in Chapter 1, people make decisions based on emotion all the time, yet emotion is unreliable as a guide. Many philosophers throughout history thought that emotion was a major distraction from living a life guided by reason. The ancient Greek philosopher Plato, for example, compared emotion and other desires to a beast that tries to lead mankind in several different directions at once (Plato, 360 BCE). The solution to this problem, Plato reasons, is to allow reason, not emotion, to be in charge of our thinking and decision making. Consider the following examples of overreliance on emotion:

> Impulsive husband: "Honey, let's buy this luxury car. Think of how awesome it would be to drive it around. Plus, it would really impress my ex-coworkers." (This might feel like the fun choice at the time, but what about when they cannot afford it in a few years?)
>
> Columnist: "Capital punishment should be legal. If someone broke into your house and killed your family, wouldn't you want him dead?" (You perhaps *would* want him dead, but that alone does not settle the issue. There are many other issues worth considering, including the issue of innocent people accidentally getting on death row, racism in the system, and so on.)

This is not to say that emotion is never relevant to a decision. The fun of driving a car is one factor (among many) in one's choice of a car, and the emotions of the victim's family are one consideration (out of many) in whether capital punishment should be allowed. However, we must not allow that emotion to override rational consideration of the best evidence for and against a decision.

One specific type of appeal to emotion tries to get someone to change his or her position only because of the sad state of an individual affected. This is known as the **appeal to pity**.

> Student: "Professor, you need to change my grade; otherwise, I will lose my scholarship." (The professor might feel bad, but to base grades on that would be unjust to other students.)
>
> Salesman: "You should buy this car from me because if I don't get this commission, I will lose my job!" (Whether or not this car is a good purchase is not settled by which salesperson needs the commission most. This salesman appears to play on the buyer's sense of guilt.)

As with other types of appeal to emotion, there are cases in which a decision based on pity is not fallacious. For example, a speaker may speak truthfully about terrible conditions of children in the aftermath of a natural disaster or about the plight of homeless animals. This may cause listeners to pity the children or animals, but if this is pity for those who are actually suffering, then it may provide a legitimate motive to help. The fallacious use of the appeal to pity occurs when the pity is not (or should not be) relevant to the decision at hand or is used manipulatively.

Dave Carpenter/Cartoonstock

With an appeal to pity, it is important to recognize when the appeal is fallacious versus genuine. Telling possible consumers you will cry if they do not purchase your product is most likely a fallacious appeal to pity.

Another specific type of appeal to emotion is the *appeal to fear*. The **appeal to fear** is a fallacy that tries to get someone to agree to something out of fear when it is contrary to a rational assessment of the evidence.

> Mom: "You shouldn't swim in the ocean; there could be sharks." (The odds of being bitten by a shark are much smaller than the odds of being struck by lightning [International Wildlife Museum, n.d.]. However, the fear of sharks tends to produce a strong aversion.)
>
> Dad: "Don't go to that country; there is a lot of crime there." (Here you should ask: How high is the crime rate? Where am I going within that country? Is it much more dangerous than my own country? How important is it to go there? Can I act so that I am safe there?)

> Political ad: "If we elect that candidate, then the economy will collapse." (Generally, all candidates claim that their policies will be better for the economy. This statement seems to use fear in order to change votes.)

This is not to say that fear cannot be rational. If, in fact, many dangerous sharks have been seen recently in a given area, then it might be wise to go somewhere else. However, a fallacy is committed if the fears are exaggerated—as they often are—or if one allows the emotion of fear to make the decision rather than a careful assessment of the evidence.

The appeal to fear has been used throughout history. Many wars, for example, have been promoted by playing on people's fears of an outside group or of the imagined consequences of nonaction.

> Politician: "We have to go to war with that country; otherwise its influence will destroy our civilization." (There may or may not be good rational arguments for the war, but getting citizens to support it out of exaggerated fears is to commit the appeal to fear fallacy.)

Sometimes, a person using the appeal to fear personally threatens the listener if she or he does not agree. This fallacy is known as the **appeal to force**. The threat can be direct:

> Boss: "If you don't agree with me, then you are fired."

Or the threat can be implied:

> Mob boss: "I'd sure like to see you come around to our way of seeing things. It was a real shame what happened to the last guy who disagreed with us."

Either way, the listener is being coerced into believing something rather than rationally persuaded that it is true. A statement of consequences, however, may not constitute an appeal to force fallacy, as in the following example:

> Boss: "If you don't finish that report by Friday, then you will be fired." (This example may be harsh, but it might not be fallacious because the boss is not asking you to accept something as true just to avoid consequences, even if it is contrary to evidence. This boss just gives you the information that you need to get this thing done in time in order to keep your job.)

It may be less clear if the consequences are imposed by a large or nebulous group:

> Campaign manager: "If you don't come around to the party line on this issue, then you will not make it through the primary." (This gives the candidate a strong incentive to accept his or her party's position on the issue; however, is the manager threatening force or just stating the facts? It could that the implied force comes from the voters themselves.)

It is sometimes hard to maintain integrity in life when there are so many forces giving us all kinds of incentives to conform to popular or lucrative positions. Understanding this fallacy can be an important step in recognizing when those influences are being applied.

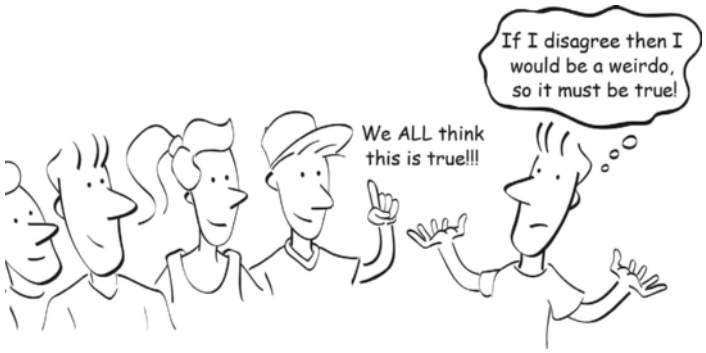
When it comes to appeals to emotions in general, it is good to be aware of our emotions, but we should not allow them to be in charge of our decision making. We should carefully and rationally consider the evidence in order to make the best decisions. We should also not let those competing forces distract us from trusting only the best and most rational assessment of the evidence.

Appeal to Popular Opinion

The **appeal to popular opinion** fallacy, also known as the *appeal to popularity fallacy*, *bandwagon fallacy*, or *mob appeal fallacy*, occurs when one accepts a point of view because that is what most people think. The reasoning pattern looks like this:

> "Almost everyone thinks that X is true. Therefore, X must be true."

The error in this reasoning seems obvious: Just because many people believe something does not make it true. After all, many people used to believe that the sun moved around the earth, that women should not vote, and that slavery was morally acceptable. While these are all examples of past erroneous beliefs, the appeal to popular opinion fallacy remains more common than we often realize. People tend to default to the dominant views of their respective cultures, and it takes guts to voice a different opinion from what is normally accepted. Because people with uncommon views are often scorned and because people strongly want to fit in to their culture, our beliefs tend not to be as autonomous as one might imagine.



Concept by Christopher Foster | Illustration by Steve Zmina

The appeal to popular opinion fallacy can be harmless, like when you see a movie because all your friends said it was great, but other times it can have negative consequences, such as bullying or discriminating against others.

The philosopher Immanuel Kant discussed the great struggle to learn to think for ourselves. He defined *enlightenment* as the ability to use one's own understanding without oversight from others (Kant, 1784). However, extricating ourselves from bandwagon thinking is harder than one might think. Consider these examples of popular opinions that might seem appealing:

> Patriot: "America is the best country in the world; everyone here knows it." (To evaluate this claim objectively, we would need a definition of *best* and relevant data about all of the countries in the world.)
>
> Animal eater: "It would be wrong to kill a dog to eat it, but killing a pig for food is fine. Why? Because that's what everyone does." (Can one logically justify this distinction? It seems simply to be based on a majority opinion in one's culture.)

> Business manager: "This business practice is the right way to do it; it is what everyone is doing." (This type of thinking can stifle innovation or even justify violations of ethics.)
>
> General formula: "Doing thing of type X is perfectly fine; it is common and legal." (You could fill in all kinds of things for X that people ethically seem to take for granted without thinking about it. Have you ever questioned the ethics of what is "normal"?)

It is also interesting to note that the "truths" of one culture are often different from the "truths" of another. This may not be because truth is relative but because people in each culture are committing the bandwagon fallacy rather than thinking independently. Do you think that we hold many false beliefs today just because a majority of people also believe them? It is possible that much of the so-called common sense of today could someday come to be seen as once popular myths.

It is often wise to listen to the wisdom of others, including majority opinions. However, just because the majority of people think and act a certain way does not mean that it is right or that it is the only way to do things; we should learn to think independently and rationally when deciding what things are right and true and best.

Appeal to Tradition

Closely related to the appeal to popular opinion is the **appeal to tradition**, which involves believing in something or doing something simply because that is what people have always believed and done. One can see that this reasoning is fallacious because people have believed and done false and terrible things for millennia. It is not always easy, however, to undo these thought patterns. For example, people tried to justify slavery for centuries based partly on the reasoning that it had always been done and was therefore "right" and "natural." Some traditions may not be quite as harmful. Religious traditions, for example, are often considered to be valuable to people's identity and collective sense of meaning. In seeking to avoid the fallacy, therefore, it is not always easy to distinguish which things from history are worth keeping. Here is an example:

> "This country got where it is today because generations of stay-at-home mothers taught their children the importance of love, hard work, and respect for their elders. Women should stay at home with their kids." (Is this a tradition that is worth keeping or is it a form of social discrimination?)

The fallacy would be to assume that something is acceptable simply because it is a tradition. We should be open to rational evaluation of whether a tradition is acceptable or whether it is time to change. For example, in response to proposals of social change, some will argue:

> "If people start changing aspect X of society, then our nation will be ruined." (People have used such reasoning against virtually every form of positive social change.)

You may be realizing that sometimes whether a piece of reasoning is fallacious can be a controversial question. Sometimes traditions are good; however, we should not assume that

something is right just because it is a tradition. There would need to be more evidence that the change would be bad than evidence that it would be good. As with appeals to popularity, it is important to reason carefully and independently about what is best, despite the biases of our culture.

Ad Hominem and Poisoning the Well

Ad hominem is Latin for "to the person." One commits the ***ad hominem*** fallacy when one rejects or dismisses a person's reasoning because of who is saying it. Here are some examples:

> "Who cares what Natalie Portman says about science? She's just an actress." (Despite being an actress, Natalie Portman has relevant background.)
>
> "Global warming is not real; climate change activists drive cars and live in houses with big carbon footprints." (Whether the advocates are good personal exemplars is independent of whether the problem is real or whether their arguments are sound.)
>
> "I refuse to listen to the arguments about the merits of home birth from a *man*." (A man may not personally know the ordeal of childbirth, but that does not mean that a man cannot effectively reason about the issue.)

It is not always a fallacy to point out who is making a claim. A person's credentials are often relevant to that person's credibility as an authority, as we discussed earlier with the appeal to authority. However, a person's personal traits do not refute that person's reasoning. The difference, then, is whether one rejects or ignores that person's views or reasoning due to those traits. To simply assume that someone's opinion has no merit based on who said it is to commit the fallacy; to question whether or not we should trust someone as an authority may not be.

This next example commits the *ad hominem* fallacy:

> "I wouldn't listen to his views about crime in America; he is an ex-convict." (This statement is fallacious because it ignores the person's reasoning. Ex-convicts sometimes know a lot about problems that lead to crime.)

This example, however, may not commit the fallacy:

> "I wouldn't trust his claims about lung cancer; he works for the tobacco industry." (This simply calls into question the credibility of the person due to a source of bias.)

One specific type of *ad hominem* reasons that someone's claim is not to be listened to if he or she does not live up to the truth of that claim. It is called the ***tu quoque*** (Latin for "you too"). Here is an example:

> "Don't listen to his claims that smoking is bad; he smokes!" (Even if the person is a hypocrite, that does not mean his claims are false.)

Another type of fallacy commits the *ad hominem* in advance. It is called **poisoning the well**: when someone attempts to discredit a person's credibility ahead of time, so that all those who are listening will automatically reject whatever the person says.

> "The next speaker is going to tell you all kinds of things about giving money to his charity, but keep in mind that he is just out to line his pockets with your money." (This may unfairly color everyone's perceptions of what the speaker says.)

To ignore arguments because of their source is often lazy reasoning. A logical thinker neither rejects nor blindly accepts whatever someone says, but carefully evaluates the quality of the reasoning used on both sides. We should evaluate the truth or falsity of people's claims on the merits of the claims themselves and based on the quality of the reasoning for them.

Practice Problems 7.2

Identify the fallacy in each statement or exchange.

1. Jeff: "I think that it is sacrilegious to tell children that a bunny drops off eggs on Easter morning. This totally detracts from the true meaning of Easter."
   Steve: "C'mon man! Everybody puts out eggs for their kids on Easter."
   a. false cause
   b. begging the question
   c. red herring
   d. appeal to popular opinion
   e. no fallacy
2. Radio announcer: "I'll tell you what: I am appalled that this new bill about the economy is even being looked at by Congress! The bureaucrats in Washington want us all to just sit around and forget about the fact that every day we are getting closer to losing this great nation. I think you'll agree with me that we don't want our nation to collapse because a bunch of sissies are worried about people who don't care about our country anyway!"
   a. red herring
   b. appeal to tradition
   c. begging the question
   d. false cause
   e. no fallacy
3. Spouse: "I know that you get angry a lot. I'm sure that soon you will hit me or something. And what are we going to do when we have kids? You will probably beat them until they run out of the house, and I will be left childless and abused!
   a. slippery slope
   b. begging the question
   c. red herring
   d. appeal to emotion
   e. no fallacy

(continued)

Practice Problems 7.2 *(continued)*

4. Sloan: "Dude, you play way too many video games."
   John: "Whatever, bro! When *Eternal Death Slayer III* came out, you were waiting in line outside the store for 4 hours to be the first to get it."
   a. *ad hominem*
   b. appeal to popularity
   c. false dilemma
   d. false cause
   e. no fallacy

5. TV preacher: "Just a $50 gift per month is all it takes to live a life of economic health and prosperity. God will reward your generous donation with 10 times more blessings in your own life if you donate to our ministry. Call now to start enjoying more happiness every day."
   a. appeal to emotion
   b. false dilemma
   c. appeal to force
   d. red herring
   e. no fallacy

6. TV preacher: "You know, in the Old Testament, God told people to give 10% of whatever they had as an offering to him. In fact, in one story, God kills 100,000 Israelites because they fail to honor his demands. This teaching remains true to this day. Now let's pass around the offering plates."
   a. *ad hominem*
   b. hasty generalization
   c. appeal to ignorance
   d. appeal to fear
   e. no fallacy

7. "July is the month during which more ice cream is sold than any other time of the year. July is also the month with the highest crime rate. Therefore, to curb crime, we should ban sales of ice cream during July."
   a. slippery slope
   b. *ad hominem*
   c. false cause
   d. false dilemma
   e. no fallacy

8. "Did you see the men land on the moon? Then how can you be so sure that it happened?"
   a. appeal to ignorance
   b. hasty generalization
   c. appeal to inadequate authority
   d. appeal to force
   e. no fallacy

9. "Which are you going to do—help your mother or be a lazy bum?"
   a. false dilemma
   b. begging the question
   c. red herring

(continued)

Practice Problems 7.2 *(continued)*

d. shifting the burden of proof
e. no fallacy

10. "The last two summers saw record heat; therefore, global warming will soon kill us all."
    a. hasty generalization
    b. appeal to fear
    c. false dilemma
    d. false cause
    e. no fallacy

11. "Why do I think that abortion should be illegal? That doesn't matter. What matters is, why do you think it should be legal?"
    a. shifting the burden of proof
    b. hasty generalization
    c. appeal to popular opinion
    d. appeal to force
    e. no fallacy

12. "If Brad Pitt's children go to that elementary school, it must be the best school in Los Angeles."
    a. appeal to fear
    b. begging the question
    c. appeal to inadequate authority
    d. appeal to tradition
    e. no fallacy

13. Father to son: "Now that we have finished the Thanksgiving meal, it's time to go watch football."
    Son: "Why should we watch football?"
    Father: "Because my father and my grandfather before him used to watch football."
    a. appeal to fear
    b. false cause
    c. accident
    d. appeal to tradition
    e. no fallacy

14. "I wouldn't listen to Bob. After all, he's just a mechanic."
    a. slippery slope
    b. *ad hominem*
    c. false cause
    d. false dilemma
    e. no fallacy

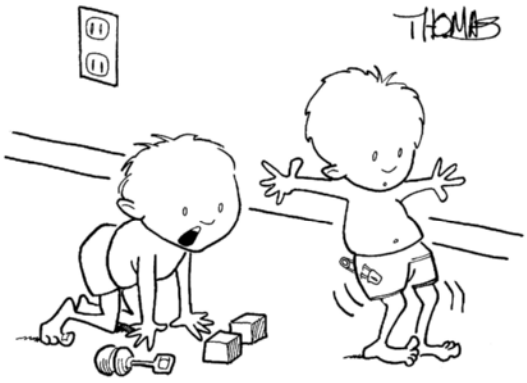
7.3 Fallacies of Clarity

Another category of fallacies consists of arguments that depend on an unclear use of words; they are called *fallacies of clarity*. Problems with clarity often result from words in our language that are vague (imprecise in meaning, with so-called gray areas) or ambiguous (having more than one meaning). Fallacies of clarity can also result from misunderstanding or misrepresenting others' arguments.

The Slippery Slope

The **slippery slope** fallacy occurs when someone reasons, without adequate justification, that doing one thing will inevitably lead to a whole chain of other things, ultimately resulting in intolerable consequences; therefore, the person reasons, we should not do that first thing.

It is perfectly appropriate to object to a policy that will truly have bad consequences. A slippery slope fallacy, however, merely assumes that a chain of events will follow, leading to a terrible outcome, when such a chain is far from inevitable. Such assumptions cause people to reject the policy out of fear rather than out of actual rational justification.



Thomas Bros./Cartoonstock

Is having to do chores an intolerable consequence that stems from learning to walk, or is this a slippery slope fallacy?

Here is an example:

> Student: "Why can't I keep my hamster in my dorm room?"
>
> Administrator: "Because if we let you keep your hamster, then other students will want to bring their snakes, and others will bring their dogs, and others will bring their horses, and it will become a zoo around here!" (There may be good reasons not to allow hamsters in dorm rooms—allergies, droppings, and so on—but the idea that it will inevitably lead to allowing all kinds of other large, uncaged animals seems to be unjustified.)

As with many fallacies, however, there are times when similar reasoning may actually be good reasoning. For example, an alcoholic may reason as follows:

> "I can't have a beer because if I do, then it will lead to more beers, which will lead to whiskey, which will lead to me getting in all kinds of trouble."

For an alcoholic, this may be perfectly good reasoning. Based on past experience, one may know that one action leads inevitably to another. One way to test if an argument commits a slippery slope fallacy, as opposed to merely raising legitimate questions about the difficulty of drawing a line, is to ask whether it would be possible to draw a line that would stop the slippery slope from continuing. What do you think about the following examples?

> "We can't legalize marijuana because if we do, then we will have to legalize cocaine and then heroine and then crack, and everyone will be a druggie before you know it!"
>
> "If you try to ban pornography, then you will have to make the distinction between pornography and art, and that will open the door to all kinds of censorship."

Some examples may present genuine questions as to where to draw a line; others may represent slippery slope fallacies. The question is whether those consequences are likely to follow from the initial change.

As some examples show, the difficulty of drawing precise lines is sometimes relevant to important political questions. For example, in the abortion debate, there is a very important question about at what point a developing embryo becomes a human being with rights. Some say that it should be at conception; some say at birth. The Supreme Court, in its famous *Roe v. Wade* decision (1973), chose the point of viability—the point at which a fetus could survive outside the womb; the decision remains controversial today.

True, it is difficult to decide exactly where the line should be drawn, but the failure to draw one at all can lead to slippery slope problems. To reason that we should not make any distinctions because it is hard to draw the line is like reasoning that there should be no speed limit because it is difficult to decide exactly when fast driving becomes unsafe. The trick is to find good *reasons* why a line should be drawn in one place rather than another.

Another example is in the same-sex marriage debate. Some feel that if same-sex marriage were to be universally legalized, then all kinds of other types of objectionable marriage will become legal as well. Therefore, they argue, we must not legalize it. This would appear to commit the slippery slope fallacy, because there are ways that gay marriage laws could be written without leading to other objectionable types of marriages becoming legal.

Moral of the Story: The Slippery Slope

It can be difficult to draw sharp boundaries and create clear definitions, but we must not allow this difficulty to prevent us from making the best and most useful distinctions we can. Policy decisions, for example, should be judged with careful reasoning, making the best distinctions we can, not by the mere application of slippery slope reasoning.

Equivocations

Equivocation is a fallacy based on *ambiguity*. An ambiguous term is a word that means two different things. For example, *fast* can mean "going without food," or it can mean "rapid." Some ambiguities are used for humor, like in the joke, "How many therapists does it take to change a lightbulb? Just one, but the lightbulb has to really *want* to change!" This, of course, is a pun on two meanings of *change*. However, when ambiguity is used in reasoning, it often creates an **equivocation**, in which an ambiguous word is used with one meaning at one point in an

argument and another meaning in another place in the argument in a misleading way. Take the following argument:

> Mark plays tennis.
> Mark is poor.
> Therefore, Mark is a poor tennis player.

If the conclusion meant that Mark is poor *and* a tennis player then this would be a logically valid argument. However, the conclusion actually seems to mean that he is bad at playing tennis, which does not follow from the fact that he is poor. This argument seems to switch the meaning of the word *poor* in between the premises and the conclusion. As another example, consider the following exchange:

> Person A: "I broke my leg; I need a doctor!"
>
> Person B: "I am a doctor."
>
> Person A: "Can you help me with my leg?"
>
> Person B: "I have a PhD in sociology; what do I know about medicine?"

Can you identify the equivocation? Person B seemed to reason as follows:

> I have a PhD in sociology.
> Therefore, I am a doctor.

Although this reasoning is right in some sense, it does not follow that person B is the type of doctor that person A needs. The word *doctor* is being used ambiguously.

Here is another example:

> Officer: Have you been drinking at all tonight?
>
> Driver: Yes.
>
> Officer: Then you are under arrest.
>
> Driver: But I only had a soda!

Clearly, the officer came to a false conclusion because he and the driver meant different things by *drinking*. See *A Closer Look: Philosophical Equivocations* for more examples.

It is very important when reasoning (or critiquing reasoning) that we are consistent and clear about our meanings when we use words. A subtle switch in meanings within an argument can be highly misleading and can mean that arguments that initially appear to be valid may actually be invalid once we correctly understand the terms involved.

A Closer Look: Philosophical Equivocations

In real life, equivocations are not always so obvious. The philosopher John Stuart Mill, for example, attempted to demonstrate his moral theory, known as utilitarianism, by arguing that, if the only thing that people desire is pleasure, then pleasure is the only thing that is desirable (Mill, 1879). Many philosophers think that Mill is equivocating between two different meanings of *desirable*. One interpretation means "able to be desired," which he uses in the premise. The other interpretation is "thing that is *good* or *should* be desired," which he uses in the conclusion. His argument would therefore be invalid, based on a subtle shift in meaning.

Another historical example is one of the most famous philosophical arguments of all time. The philosopher Saint Anselm long ago presented an argument for the existence of God based on the idea that the word *God* means the greatest conceivable thing and that a thing must exist to be greatest (Anselm, n.d.). His argument may be simplified as follows:

God means the greatest conceivable thing.
A thing that exists is greater than one that does not.
We can conceive of God existing.
Therefore, God must exist.

Though this is still an influential argument for the existence of God, some think it commits a subtle equivocation in its application of the word *great*. The question is whether it is talking about the greatness of the concept or the greatness of the thing. The first premise seems to take it be about the greatness of the concept. The second premise, however, seems to depend on talking about the thing itself (actual existence does not change the greatness of the concept). If this analysis is right, then the word *greatest* has different meanings in the first two premises, and the argument may commit an equivocation. In that case the argument that appears to be valid may in fact be subtly invalid.

The Straw Man

Have you ever heard your views misrepresented? Most of us have. Whether it is our religion, our political views, or our recreational preferences, we have probably heard someone make our opinions sound worse than they are. If so, then you know that can be a very frustrating experience.

Concept by Christopher Foster | Illustration by Steve Zmina

Misrepresenting the views of the other side through a straw man fallacy can be frustrating and will fail to advance the issue.

The **straw man** fallacy is an attack on a person's position based on a (deliberate or otherwise) misrepresentation of his or her actual views. The straw man fallacy is so named because it is like beating up a scarecrow (a straw man) rather than defeating a real person (or the real argument). The straw man fallacy can be pernicious; it is hard for any debate to progress if the differing sides are not even fairly represented. We can hope to refute or improve on a view only once we have understood and represented it correctly.

If you have listened to people arguing about politics, there is a good chance that you have heard statements like the following:

> Democrat: "Republicans don't care about poor people."
>
> Republican: "Democrats want the government to control everything."

These characterizations do not accurately represent the aims of either side. One way to tell whether this is a fair representation is to determine whether someone with that view would agree with the characterization of their view. People may sometimes think that if they make the other side sound dumb, their own views will sound smart and convincing by comparison. However, this approach is likely to backfire. If our audience is wise enough to know that the other party's position is more sophisticated than was expressed, then it actually sounds unfair, or even dishonest, to misrepresent their views.

It is much harder to refute a statement that reflects the complexity of someone's actual views. Can you imagine if politically partisan people spoke in a fairer manner?

> Democrat: "Republicans believe that an unrestrained free market incentivizes innovation and efficiency, thereby improving the economy."
>
> Republican: "Democrats believe that in a country with as much wealth as ours, it would be immoral to allow the poorest among us to go without life's basic needs, including food, shelter, and health care."

That would be a much more honest world; it would also be more intellectually responsible, but it would not be as easy to make other people sound dumb. Here are more—possibly familiar—examples of straw man fallacies, used by those on opposing sides of a given issue:

> Environmentalist: "Corporations and politicians want to destroy the earth. Therefore, we should pass this law to stop them." (Perhaps the corporations and politicians believe that corporate practices are not as destructive as some imply or that the progress of industry is necessary for the country's growth.)
>
> Developer: "Environmentalists don't believe in growth and want to destroy the economy. Therefore, you should not oppose this power plant." (Perhaps environmentalists believe that the economy can thrive while shifting to more eco-friendly sources.)
>
> Young Earth creationist: "Evolutionists think that monkeys turned into people! Monkeys don't turn into people, so their theory should be rejected." (Proponents of evolution would state that there was a common ancestor millions of years ago. Genetic changes occurred very gradually between thousands and thousands of generations, leading to eventual species differences.)
>
> Atheist: "Christians don't believe in science. They think that Adam and Eve rode around on dinosaurs! Therefore, you should not take their views seriously." (Many Christians find their religion to be compatible with science or have nonliteral interpretations of biblical creation.)

Closely related to the straw man fallacy is the **appeal to ridicule**, in which one simply seeks to make fun of another person's view rather than actually refute it. Here is an example:

> "Vegans are idiots who live only on salad. Hooray for bacon!" (Actually, vegans are frequently intelligent people who object to the confinement of animals for food.)
>
> "People with those political opinions are Nazis!" (Comparisons to Nazis in politics are generally clichéd, exaggerated, and disrespectful to the actual victims of the Holocaust. See Chapter 8 for a discussion of the fallacy *reductio ad Hitlerum*.)

In an academic or any other context, it is essential that we learn not to commit the straw man fallacy. If you are arguing against a point of view, it is necessary first to demonstrate that you have accurately understood it. Only then have you demonstrated that you are qualified to discuss its truthfulness. Furthermore, the attempt to ridicule other's views is rationally counterproductive; it does not advance the discussion and seeks only to mock other people. (See *Everyday Logic: Love and Logic* for how you can avoid the straw man fallacy and the appeal to ridicule.)

When we seek to defend our own views, the intellectually responsible thing to do is to understand opposing viewpoints as fully as possible and to represent them fairly before we give the reasons for our own disagreement. The same applies in philosophy and other academic topics. If someone want to pontificate about a topic without having understood what has already been done in that field, then that person simply sounds naive. To be intellectually responsible, we have to make sure to correctly understand what has been done in the field before we begin to formulate our own contribution to the field.

Everyday Logic: Love and Logic

When it comes to real-life disagreements, people can become very upset—even aggressive. This is an understandable reaction, particularly if the disagreement concerns positions we think are wrong or perspectives that challenge our worldview. However, this kind of emotional reaction can lead to judgments about what the other side may believe—judgments that are not based on a full and sophisticated understanding of what is actually believed and why. This pattern can be the genesis of much of the hostility we see surrounding controversial topics. It can also lead to common fallacies such as the straw man and appeal to ridicule, which are two of the most pernicious and hurtful fallacies of them all.

Logic can help provide a remedy to these types of problems. Logic in its fullest sense is not just about creating arguments to prove our positions right—and certainly not just about proving others wrong. It is about learning to discover truth while avoiding error, which is a goal all participants can share. Therefore, there need not be any losers in this quest.

(continued)

Everyday Logic: Love and Logic *(continued)*

If we stop short of a full appreciation of others' perspectives, then we are blocked from a full understanding of the topic at hand. One of the most important marks of a sophisticated thinker is the appreciation of the best reasoning on all sides of each issue.

We must therefore resist the common temptation to think of people with opposing positions as "stupid" or "evil." Those kinds of judgments are generally unfair and unkind. Instead we should seek to expand our own points of view and remove any animosity. Here are some places to begin:

- We can read what smart people have written to represent their own views about the topic, including reading top scholarly articles explaining different points of view.
- We can really listen with intelligence, openness, and empathy to people who feel certain ways about the topic without seeking to refute or minimize them.
- We can seek to put ourselves "in their shoes" with sensitivity and compassion.
- We can speak in ways that reflect civility and mutual understanding.

It will take time and openness, but eventually it is possible to appreciate more fully a much wider variety of perspectives on life's questions.

Furthermore, once we learn to fairly represent opposing points of view, we may not find those views to be as crazy as we once thought. Even the groups that we initially think of as the strangest actually have good reasons for their beliefs. We may or may not come to agree, but only in learning to appreciate why these groups have such beliefs can we truly say that we understand their views. The process and effort to do so can make us more civil, more mature, more sophisticated, more intelligent, and more kind.

Fallacy of Accident

The **fallacy of accident** consists of applying a general rule to cases in which it is not properly applied. Often, a general rule is true in most cases, but people who commit this fallacy talk as though it were always true and apply it to cases that could easily be considered to be exceptions.

Some may find the name of this fallacy confusing. It is called the fallacy of accident because someone committing this fallacy confuses the "essential" meaning of a statement with its nonessential, or "accidental," meaning. It is sometimes alternately called *dicto simpliciter*, meaning "unqualified generalization" (Fallacy Files, n.d.). Here are some examples:

> "Of course ostriches must be able to fly. They are birds, and birds fly." (There clearly are exceptions to that general rule, and ostriches are among them.)
>
> "If you skip class, then you should get detention. Therefore, because you skipped class in order to save someone from a burning building, you should get detention." (This may be an extreme case, but it shows how a misapplication of a general rule can go astray.)

> "Jean Valjean should go to prison because he broke the law." (This example, from the novel *Les Miserables*, involves a man serving many years in prison for stealing bread to feed his starving family. In this case the law against stealing perhaps should not be applied as harshly when there are such extenuating circumstances.)

The last example raises the issue of sentencing. One area in which the fallacy of accident can occur in real life is with extreme sentencing for some crimes. In such cases, though an action may meet the technical definition of a type of crime under the law, it may be far from the type of case that legislators had in mind when the sentencing guidelines were created. This is one reason that some argue for the elimination of mandatory minimum sentencing.

Another example in which the fallacy of accident can occur is in the debate surrounding euthanasia, the practice of intentionally ending a person's life to relieve her or him of long-term suffering from a terminal illness. Here is an argument against it:

> It is wrong to intentionally kill an innocent human being.
> Committing euthanasia is intentionally killing an innocent human being.
> Therefore, euthanasia is wrong.

The moral premise here is generally true; however, when we think of the rule "It is wrong to intentionally kill an innocent human being," what one may have in mind is a person willfully killing a person without justification. In the case of euthanasia, we have a person willingly terminating his or her own life with a strong type of justification. Whatever one's feelings about euthanasia, the issue is not settled by simply applying the general rule that it is wrong to kill a human being. To use that rule seems to oversimplify the issue in a way that misses the subtleties of this specific case. An argument that properly addresses the issue will appeal to a moral principle that makes sense when applied to the specific issues that pertain to the case of euthanasia itself.

It is difficult to make general rules that do not have exceptions. Therefore, when specific troubling cases come up, we should not simply assume the rule is perfect but rather consider the merits of each case in light of the overall purpose for which we have the rule.

Fallacies of Composition and Division

Two closely related fallacies come from confusing the whole with its parts. The **fallacy of composition** occurs when one reasons that a whole group must have a certain property because its parts do. Here is an example:

> Because the citizens of that country are rich; it follows that the country is rich. (This may not be the case at all; what if the government has outspent its revenue?)

You should be able to see why this one reaches an incorrect conclusion:

> "If I stand up at a baseball game then I will be able to see better. Therefore, if everyone stands up at the baseball game, then everyone will be able to see better."

This statement seems to make the same mistake as the baseball example:

> If the government would just give everyone more money, then everyone would be wealthier. (Actually, giving away money to all would probably reduce the value of the nation's currency.)

A similar fallacy, known as the **fallacy of division**, does the opposite. Namely, it makes conclusions about members of a population because of characteristics of the whole. Examples might include the following:

> That country is wealthy; therefore, its citizens must be wealthy. (This one may not follow at all; the citizens could be much poorer than the country as a whole.)

> That team is the best; the players on the team must be the best in the league. (Although the ability of the team has a lot to do with the skills of the players, there are also reasons, including coaching and teamwork, why a team might outperform the average talent of its roster.)

These types of fallacies can lead to stereotyping as well, in which people arrive at erroneous conclusions about a group because of (often fallacious) generalizations about its members. Conversely, people often make assumptions about individuals because of (often fallacious) views about the whole group. We should be careful when reasoning about populations, lest we commit such harmful fallacies.

Practice Problems 7.3

Identify the fallacy in each statement or exchange.

1. "Jim says that it is bad to invest in bonds right now. What does he know; he's just a janitor!"
   a. appeal to force
   b. *ad hominem*
   c. appeal to popular opinion
   d. equivocation
   e. no fallacy
2. Student #1: "Animals are on the earth for humans to eat."
   Student #2: "How do you know that?"
   Student #1: "Because they provide nourishment for us."
   a. biased sample
   b. inadequate authority
   c. equivocation

(continued)

Practice Problems 7.3 *(continued)*

d. begging the question
e. no fallacy

3. Politician: "The best way to create equity in society is to tax the rich more and redistribute wealth to those who have less."
Moderator: "And how do you plan on implementing these tax changes in Congress?"
Politician: "If we don't figure out how to do this, then more and more children will feel the pain of hunger at night."
   a. appeal to tradition
   b. poisoning the well
   c. red herring
   d. false dilemma
   e. no fallacy

4. "If we legalize gay marriage, the whole world will decay morally."
   a. appeal to emotion
   b. appeal to ignorance
   c. slippery slope
   d. false cause
   e. no fallacy

5. "You know communism was going to fail! After all, Karl Marx was an alcoholic!"
   a. slippery slope
   b. *ad hominem*
   c. false cause
   d. false dilemma
   e. no fallacy

6. "You think that Stanford is better only because you went there."
   a. appeal to popularity
   b. appeal to ignorance
   c. hasty generalization
   d. *ad hominem*
   e. no fallacy

7. "Look at this picture of an aborted fetus. How can you support abortion?!!"
   a. false cause
   b. appeal to emotion
   c. appeal to popular opinion
   d. appeal to force
   e. no fallacy

8. "Everyone likes *Friends*, so it must be a good show."
   a. non sequitur
   b. *ad hominem*
   c. appeal to popular opinion
   d. appeal to inadequate authority
   e. no fallacy

(continued)

Practice Problems 7.3 *(continued)*

9. "I strongly oppose the opposition's view that we shouldn't care about our children's education."
   a. straw man
   b. begging the question
   c. red herring
   d. appeal to tradition
   e. no fallacy

10. "You have the right to make money, so making money is right."
   a. appeal to emotion
   b. appeal to ignorance
   c. slippery slope
   d. equivocation
   e. no fallacy

11. "Houses in the United States with storm cellars are more often hit by tornadoes, so you shouldn't get a storm cellar."
   a. false cause
   b. equivocation
   c. appeal to ignorance
   d. appeal to ridicule
   e. no fallacy

12. "I am opposed to abortion because Jim is pro-choice, and he's an idiot!"
   a. *ad hominem*
   b. poisoning the well
   c. shifting the burden of proof
   d. false dilemma
   e. no fallacy

13. "If I give this homeless person a dollar then I'll have to give the next guy a dollar and so forth. . . . I'll end up broke!"
   a. *ad hominem*
   b. slippery slope
   c. shifting the burden of proof
   d. false dilemma
   e. no fallacy

14. "You oppose her policies only because you lost the election to her."
   a. appeal to popular opinion
   b. appeal to ignorance
   c. hasty generalization
   d. *ad hominem*
   e. no fallacy

15. "I am pro-choice because I don't think that women should have no rights in our society."
   a. appeal to force
   b. *ad hominem*
   c. straw man

(continued)

Practice Problems 7.3 *(continued)*

d. appeal to ridicule
e. no fallacy

16. "We should have prescription drug care. Would you want your grandma to suffer?"
    a. appeal to emotion
    b. hasty generalization
    c. red herring
    d. appeal to popular opinion
    e. no fallacy

17. "There is no solid scientific evidence for the existence of spirits, so they don't exist."
    a. appeal to inadequate authority
    b. appeal to force
    c. biased sample
    d. appeal to ignorance
    e. no fallacy

18. "Most Americans support this policy, so it must be right."
    a. appeal to popularity
    b. slippery slope
    c. shifting the burden of proof
    d. false dilemma
    e. no fallacy

19. "I don't think that we should bomb innocent people in order to steal their oil."
    a. false cause
    b. hasty generalization
    c. straw man
    d. appeal to popular opinion
    e. no fallacy

20. "Timothy was 10 minutes late to the meeting this morning. I can tell he's going to be a horrible employee."
    a. shifting the burden of proof
    b. hasty generalization
    c. appeal to pity
    d. appeal to force
    e. no fallacy

21. "If I cheat on a curved test, I'll get a better grade, so if we all cheat on the test, we will all get better grades."
    a. slippery slope
    b. *ad hominem*
    c. post hoc
    d. fallacy of composition
    e. no fallacy

22. "I promised myself I would never lie again. That is why I have to tell this drunk angry man that the child who just escaped his basement is hiding behind the bush in my yard."
    a. burden of proof
    b. fallacy of accident

(continued)

Practice Problems 7.3 *(continued)*

c. red herring
d. appeal to tradition
e. no fallacy

23. Doctor: "It is ethically acceptable to test newly developed medications on homeless people who need money."
Nurse: "But doesn't that exploit these people based on their need?"
Doctor: "Prove to me that it is not acceptable."
a. appeal to force
b. appeal to inadequate authority
c. straw man
d. shifting the burden of proof
e. no fallacy

24. "What? You believe that peace is actually possible in the Middle East? Ha! That's the craziest thing I have ever heard."
a. appeal to ridicule
b. appeal to tradition
c. poisoning the well
d. appeal to popular opinion
e. no fallacy

25. "It's not acceptable to harm another person. Since jail harms the freedoms of a person, we should release serial killers and rapists."
a. begging the question
b. false cause
c. equivocation
d. fallacy of accident
e. no fallacy

Summary and Resources

Chapter Summary

There are many fallacies beyond those covered in this chapter. However, learning this sample of important and common logical fallacies will help sharpen one's critical thinking skills so that one is less likely to become the victim (knowingly or otherwise) of logical tricks. However, when learning about fallacies it is also important to stay positive and to use the knowledge for good: to promote high-quality reasoning delivered in a sincere and respectful manner (for some ideas on how to stay positive, see *Everyday Logic: Staying Positive in the Face of Fallacies*).

It is a mark of a mature thinker to consider multiple points of view and come to conclusions only after thorough consideration of the best evidence and best reasoning available. We should never fall for these types of traps (often set by a lack of effort in carefully thinking through the evidence). Learning the fallacies helps one think critically and avoid erroneous reasoning—and can help us avoid falling for fallacies in the future.

Everyday Logic: Staying Positive in the Face of Fallacies

Learning about the fallacies should come with a warning: Once you learn to identify the fallacies, you may start to notice them everywhere. People commit them on TV, in newspapers, in books, and in face-to-face conversations all the time. Noticing the prevalence of these fallacies can be fascinating and eye-opening; however, it can also be dangerous. One of the risks of noticing fallacies is cynicism, in which one becomes overly skeptical of anything and everything. Becoming discouraged about the power of reason can even lead some to misology, the hatred of logic itself. Socrates himself warned about misology, stating that "no greater misfortune could happen to anyone than that of developing a dislike for argument" (Plato, 1961, p. 71). Some people hear so many fallacies that they begin to wonder if reason itself is ever to be trusted.

We need not come to that conclusion. One of the main reasons that we learn about fallacies is to learn not to commit them and to reason sincerely, honestly, and carefully. The chief purpose of the *Moral of the Story* feature boxes in this chapter is to focus on the positive message that we can learn from each fallacy, rather than just focusing on people's mistakes. By reasoning with great care, we can constantly improve our abilities to develop trustworthy patterns of reasoning that can lead to the discovery of all kinds of truths of which we may never have previously been aware. In so doing, we can be more honest, intelligent, civil, and deep.

A second danger in noticing fallacies is becoming what Kevin deLaplante (2014), philosopher of science and founder of the Critical Thinking Academy, calls a "fallacy bully." Some people learn about fallacies and then become exceptionally eager to point them out. However, pointing out someone's fallacies is a bit like pointing out his or her grammatical mistakes; it can be considered annoying or rude.

American writer Max Shulman's short story "Love Is a Fallacy," in which the main character's attempt to educate his love interest about fallacies backfires, is one humorous illustration of a fallacy bully in action. (Numerous dramatic adaptations of Shulman's story are available on YouTube, including one produced by George Argento, which takes place on a college campus: https://www.youtube.com/watch?v=7_81fz6kUJI.) One ought to be quite judicious about when it is appropriate to point out other people's fallacies.

Another problem is that fallacy bullies often overreach. It is important to remember that almost all of the argument forms defined in this chapter have legitimate uses. As noted, appeals to authority, slippery slope reasoning, and even *ad hominem* arguments can have legitimate applications as well as fallacious ones. Knowing when, whether, and to what degree a certain argument may fail to adequately demonstrate the truth of its conclusion requires a kind of wisdom over and above recognizing the general form of the argument.

We should make sure to have that kind of wisdom and even kindness in our hearts as we seek to understand and critique people's reasoning. The result will be that we can share reasoning in ways that are positive, respectful, civil, and productive. Remember, logic is not a competition; our goal should not be to defeat others in debate. If our goal is not so much to be *right* but to find *truth*, then we can see others, even those with whom we may disagree, as being on the same team.

Critical Thinking Questions

1. Think of a time that someone used an *ad hominem* argument against you or you used an *ad hominem* argument against someone else. What was the topic you were discussing, and what would have been a better way to present the argument or disagree?
2. Now that you have studied the fallacies, think about how these fallacies are used in the media and advertisements. What are some examples of the use of fallacies in these areas, and how do they function to influence people?
3. Understanding the informal fallacies is a great way to protect oneself against manipulation. How do you plan on honing your skills in fallacy identification as you move forward in your career and social life?
4. Often it is easier to use fallacies than it is to present well-reasoned positions to support your ideas and claims. Is there ever a time in which it is acceptable to use fallacious reasoning to get people to do what you want? Why is this ethically permissible?

Web Resources

https://owl.english.purdue.edu/owl/resource/659/03
Purdue's Online Writing Lab (OWL) provides a list of fallacies, with slightly different terminology than ours (which is common), but it gives nice and clear definitions of fallacies with examples.

http://www.nizkor.org/features/fallacies
The Nizkor Project, which is dedicated to education about the Holocaust, also provides a thorough list of fallacies with definitions, examples, and explanations.

http://www.csun.edu/~dgw61315/fallacies.html
California State University Northridge's debate team explains a number of fallacies and includes their Latin names.

Key Terms

ad hominem The fallacy of rejecting or dismissing a person's reasoning on the basis of some irrelevant fact about him or her.

appeal to emotion A fallacy in which someone argues for a point based on emotion rather than on reason.

appeal to fear One specific type of appeal to emotion that tries to get someone to agree with something out of fear rather than a rational assessment of the evidence.

appeal to force One specific type of appeal to emotion that tries to get people to accept a conclusion by threatening them with negative consequences specifically for not accepting the conclusion.

appeal to ignorance The argument either that a claim must be false because it has not been demonstrated to be true or that a claim must be true because it has not been proved to be false.

appeal to inadequate authority A fallacy that reasons that something is true because someone said so, even though that person is, for one reason or another, not a reliable source on that topic.

appeal to pity One specific type of appeal to emotion that tries to get someone to change his or her position only because of the unfortunate situation of an individual affected.

appeal to popular opinion A fallacy in which one—knowingly or not—accepts a point of view because that is what most other people think; also known as *appeal to popularity*, *bandwagon fallacy*, or *mob appeal*.

appeal to ridicule A fallacy that seeks to make fun of another person's view rather than actually refute it.

appeal to tradition A fallacy that argues for a conclusion based on the claim that it is what people have always done or believed.

begging the question A fallacy in which one gives an argument that assumes a major point at issue; also known as *petitio principii*.

biased sample A sample that is not representative of the whole population, perhaps due to some tendency within the method of sampling to favor some results over others.

cherry picking An inductive generalization that emphasizes evidence for a claim while ignoring the evidence against the claim, or vice versa.

circular reasoning A fallacy in which the premise is the same as, or is synonymous with, the conclusion.

equivocation A fallacy that switches the meaning of a key term so that the argument seems valid when it actually is not.

fallacies Common patterns of reasoning that have a high likelihood of leading to false conclusions.

fallacy of accident A fallacy that applies a general rule in cases in which the rule is not properly applied.

fallacy of composition A fallacy that infers that a whole group has a certain property because each member of it does.

fallacy of division A fallacy that infers that the members of a group must have a certain property because the whole group does.

false cause A fallacy that assumes something was caused by another thing just because it came after it; also known as *post hoc ergo propter hoc*.

false dilemma A fallacy that makes it sound as though there are only a certain number of options when in fact there are more than just those options; also known as *false dichotomy*.

hasty generalization An inductive generalization in which the sample size is too small to adequately support the conclusion.

non sequitur A fallacy in which the premises have little bearing on the truth of the conclusion.

poisoning the well A fallacy in which someone attempts to discredit someone's credibility ahead of time, so that all those who listen to that person will automatically reject whatever he or she says.

red herring A fallacy in which a deliberate distraction is used in an attempt to veer the listener away from the real question at hand.

shifting the burden of proof A fallacy in which the reasoner has the burden to demonstrate the truth of his or her own side, but instead of meeting that burden simply points out the failure of the other side to prove its own position.

slippery slope A fallacy that argues that we should not do something because if we do, then it will lead to a series of events that will end in a terrible conclusion, when this chain of events is not likely at all.

straw man A fallacy in which one attempts to refute a very weak or inaccurate version of the other side's position.

tu quoque A version of the *ad hominem* fallacy that argues that someone's claim is not to be listened to if he or she does not live up to the truth of that claim.

Answers to Practice Problems

Practice Problems 7.1

1. d
2. d
3. b
4. d
5. c
6. d
7. c
8. c
9. a
10. b

Practice Problems 7.2

1. d
2. a
3. a
4. a
5. a
6. d
7. c
8. a
9. a
10. a
11. a
12. c
13. d
14. b

Practice Problems 7.3

1. b
2. d
3. c
4. c
5. b
6. d
7. b
8. c
9. a
10. d
11. a
12. a
13. b
14. d
15. c
16. a
17. d
18. a
19. c
20. b
21. d
22. b
23. d
24. a
25. d